

### REMARKS

Claims 15-28 are pending in the present application. Claim 15 has been amended. Claim 15 is the sole independent claim. The Examiner is respectfully requested to reconsider the outstanding rejections in view of the above amendments and the following remarks.

#### *Rejection Under 35 U.S.C. § 112*

Claims 15-28 stand rejected under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, as failing to comply with the written description requirement. Particularly, the Examiner asserts that the limitation, "the spacer transfers without impact the stored energy from the springs of the at least one start unit," was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time of filing.

In response, Applicant respectfully refers the Examiner to page 4, lines 9-15, of the original specification which states:

"The invention is based on the recognition that the injection of the agent in/under the skin or in the muscles can be carried out **without an impact** if the energy released in the first few tenth seconds has enough power .... In such a solution the piston in the agent cartridge is in continuous contact with the piston rod transferring the energy, and ... **it is not necessary that the piston rod be first accelerated by the released energy, and use this speed to blow into the agent cartridge piston ...**" (emphasis added).

This passage of the original specification clearly provides support for the claimed element, i.e., transferring the stored energy without impact.

However, it is noted that the Examiner's rejection includes the following statement:

"According to Fig. 3, when the locking mechanism 4 is released, the spacer 33 and a spring of the at least [one] start unit are both extended. Therefore, the spacer 33 must[ ] transfer[ ] with impact the stored energy in some degree[.]"

(Office Action at page 2, last paragraph). This statement is more directed to the issue of whether the “without impact” limitation is **enabled**, rather than whether it complies with the written description requirement.

First, Applicant respectfully points out that the Examiner’s statement mischaracterizes what is illustrated in Fig. 3. Particularly, Fig. 3 represents the phase **after** the injection has been fired, **not before** firing the injection. Fig. 3 illustrates that **after firing the injection**, the cartridge will be distanced manually from the piston. During firing of the injection, there is **no space** between the piston 51 and cartridge 81 (as shown in Figs. 1 and 2).

Furthermore, Applicant submits that the original specification would enable one of ordinary skill in the art to make and use the claimed invention. Applicant respectfully points out that the Merriam-Webster Online Dictionary defines “impact” to mean “an impinging or striking especially of **one body against another**,” and to include “collision” as a synonym.<sup>1</sup> Further, the Examiner is again respectfully referred to page 4, lines 9-15, of the original specification which states:

“The invention is based on the recognition that the injection of the agent in/under the skin or in the muscles can be carried out without an impact if the energy released in the first few tenth seconds has enough power .... In such a solution **the piston in the agent cartridge is in continuous contact with the piston rod transferring the energy**, and, unlike known structures, it is not necessary that the piston rod be first accelerated by the released energy, and use this speed to blow into the agent cartridge piston ...” (emphasis added).

Here, the specification describes how to avoid an impact on the piston when releasing the stored energy – by maintaining continuous contact between piston and the piston rod before and after the release of the lock mechanism.

This is explained in further detail in page 13, lines 3-12, of the original specification which states:

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<sup>1</sup> <[http://www.merriam-webster.com/dictionary/impact\[2\]](http://www.merriam-webster.com/dictionary/impact[2])>, retrieved on May 28, 2009

"The full cartridge 8 is inserted into the tube ... and screwed into the cartridge reception threads. Due to the **precise measurement and the uniform size** of cartridge[s] 8 manufactured for the device 20, **the piston 81 of the cartridge 8 ... precisely touches the bottom end of the piston rod**. Then, ... unlocking with the [ ] releasing mechanism [5], the energy storage structure 3 press[es] the ... piston rod 42 powerfully toward the cartridge 8, where the piston 81 injects the agent through the discharge hole ..." (emphasis added).

This explains how the requisite amount of energy for injecting an agent can be transferred from the energy storage structure, even though **continuous contact** is maintained between the piston rod and the piston from the time before the lock mechanism is released (Fig. 2) until after the agent is injected (Fig. 3). Because of this continuous contact, there is **no collision** between the piston rod and piston when the stored energy is transferred. Also, since the piston is touching the cartridge before firing, there is continuous contact between the piston and cartridge and, thus, no striking of the piston and cartridge. As such, there is **no impact** on the piston during firing of the injection.

Thus, for purposes of clarification, independent claim 1 has been amended to recite that "the spacer transfers without impact the stored energy ... through a piston to contents of the agent cartridge, the stored energy being transferred without striking another body against the piston and with the cartridge and piston rod being in continuous contact during firing of the injection." As such, it is clear that the stored energy is transferred through the piston without impact.

Therefore, the original specification clearly supports and enables the limitation of "the stored energy being transferred without occurrence of an impact on the piston," as presently recited in independent claim 15. Accordingly, Applicant respectfully submits that the claims comply with both the written description requirement and the enablement requirement of § 112, 1<sup>st</sup> paragraph. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

*Rejection Under 35 U.S.C. § 103*

Claims 15-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,623,332 to Lindmayer et al. (hereafter "Lindmayer") in view of U.S. Patent Application Publication No. 2001/0031945 to Haar et al. (hereafter "Haar"). This rejection is respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicant respectfully submits that the prior art fails to provide a teaching or suggestion of all of the features in the claimed invention.

Here, independent claim 15 recites that "upon release of the lock mechanism, the spacer transfers **without impact** the stored energy from the springs of the at least one start unit via the lock mechanism through a piston to contents of the agent cartridge, the stored energy being transferred **without striking another body against the piston** ... during firing of the injection" (emphasis added). This claim feature is advantageous because it allows for an injection to be carried out without hammering the skin and body, thereby preventing a bruise.

Applicant respectfully submits that Lindmayer nor Haar, taken separately or in obvious combination, fail to teach or suggest the aforementioned claim feature.

Lindmayer's invention requires an impact to occur on the piston. Specifically, Lindmayer teaches that the loading of medicine into the injector leaves a gap between the front surface of the bushing 38 and a washer 57, which is part of piston 51 (see col. 4, lines 65-67; col. 6, lines 18-27). According to Lindmayer, such gap "causes the bushing 38 to **hit** the washer 57 with sufficient force to cause piercing of the skin by the jet of medicine" (col. 6, lines 63-67; emphasis added). Thus, Lindmayer teaches that an impact occurs on the piston by the bushing.

Haar also requires an impact to occur on the piston. Particularly, Haar teaches a first embodiment where the impact of piston 18a on plunger 18c causes the gel 17 to be injected (see

paragraph 0060; Figs. 2-3). In a second embodiment, Haar requires push rod 38 to impact on piston 41 to inject the gel (see paragraph 0066; Figs. 4-5).

In view of the foregoing, Lindmayer and Haar, taken separately or in obvious combination, fail to teach or suggest every feature recited in independent claim 15. At least for this reason, Applicant respectfully submits that claim 15 is allowable. Accordingly, claims 16-28 are allowable at least by virtue of their dependency on an allowable independent claim. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

### *Conclusion*

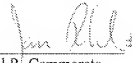
In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider the outstanding rejections and issue a Notice of Allowance in the present application.

Should the Examiner believe that any outstanding matters remain in the present application, the Examiner is respectfully requested to contact Jason W. Rhodes (Reg. No. 47,305) at the telephone number of the undersigned to discuss the present application in an effort to expedite prosecution.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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